UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY. DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/734,783 | 12/11/2000 | Randall R. Stewart | CISCO-3358 | 4702 |

7590 07/08/2005

Kenneth D'Alessandro
Sierra Patent Group
P.O. Box 6149
Stateline, NV 89449

| EXAMINER | |
|---|---|
| SHEW, JOHN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2664 | |

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/734,783 | STEWART, RANDALL R. | |
| | Examiner | Art Unit | |
| | John L. Shew | 2664 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-17* is/are allowed.

6)☒ Claim(s) *1-4,8-11,18-21 and 24-27* is/are rejected.

7)☒ Claim(s) *5-7, 22-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/11/2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 8, 10, 18, 20, 21, 24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt (Patent number 5513185).

Claim 1, Schmidt teaches a communications link failure detection system (Abstract lines 1-3) referenced by the error rate monitor to take a transmission link out of service, comprising at least two nodes including a first node and a second node (FIG. 1, column 3 lines 49-55) referenced by first transceiver node 107 112 and second transceiver node 102 117, each node having disposed therein a communication system configured to operate at least one packetized communications link (FIG. 1, column 3 lines 49-55) referenced by the node 1 transmitter on communications medium103 and node 2 transmitter on communications medium 113, and further where each node of said at least two nodes has at least one communication link where said communications link is

in operable communication with said communication system (FIG. 1, column 3 lines 49-60) referenced by the communication mediums 103 113 forming a transmission link between node 1 and node 2, where said first node's communication link and said second node's communications link are in operable communication with each other (FIG. 1, column 3 lines 49-60) referenced by the messages transferred over the transmission link between node 1 and node 2, and where said communications system disposed within said first node further comprises a sent counter (FIG. 1, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent, a threshold value having an initial value (column 2 lines 32-34) referenced by the threshold T which implicitly carries an initial value upon which to compare values, and a RTT value where said RTT value is set to a value corresponding to the time it takes a packet to make a trip from said first node to said second node and back to said first node (column 2 lines 20-27) referenced by $\tau$ which is the round trip delay on the transmission link, and where said second node sends periodic packets to said first node (column 1 lines 43-47, column 2 lines 20-27) referenced by required SUERM messages which are periodic to insure synchronization between node 1 and node 2, and where said communications system can detect a communications link failure using said sent counter said threshold value and said RTT value (column 2 lines 20-39) referenced by the use of the error counter and threshold T and round trip delay $\tau$ in determination of a link failure changeover.

Claim 2, Schmidt teaches where the second node (FIG. 1) referenced by node 2 of receiver 102 and transmitter 117, further comprises within the communications system disposed therein (FIG. 1) referenced by the communications system of node 1 and node 2, a second sent counter (FIG. 1, column 2 lines 20-31 lines 40-46) referenced by the node 2 Error Rate Monitor 101 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent, a second threshold value having an initial value (column 2 lines 32-34) referenced by the threshold T which implicitly carries an initial value upon which to compare values, and a second RTT value where said second RTT value is set to a value corresponding to the time it takes a packet to make a trip from said second node to said first node and back to said second node (column 2 lines 20-27) referenced by $\tau$ which is the round trip delay on the transmission link, and where said communications system can detect a communications link failure using said second sent counter said second threshold value and said second RTT value (column 2 lines 20-39) referenced by the use of the counter q and threshold T and round trip delay $\tau$ in determination of a link failure changeover.

Claim 3, Schmidt teaches where said first sent counter and said second sent counter are set to 0 at the start of a communications session (Abstract lines 10-11) referenced by the initialization of the counter to 0.

Claim 4, Schmidt teaches where said threshold values are a constant (FIG. 5) referenced by the threshold value 503 represented by a constant line value.

Claim 8, Schmidt teaches a method for detecting the status of a communications link between a first node and a second node (FIG. 1, Abstract lines 1-3) referenced by node 1 ERM 111 and node 2 ERM 101 used for determining when a transmission link should be taken out of service, the method comprising establishing an RTT value for use in said first node using said second node (column 2 lines 20-27) referenced by $\tau$ which is the round trip delay on the transmission link between nodes 1 and 2, setting a sent counter in said first node to 0 (FIG. 1, Abstract lines 10-11, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent and the setting of this counter to 0, and starting an RTT-based time interval in said first node when a packet is received from said second node (FIG. 2, column 4 lines 46-54) referenced by the counter 201 using a time interval based on $\tau$ the round trip delay, incrementing said sent counter when a packet is sent to said second node from said first node according to said RTT-based time interval (FIG. 3, FIG. 4, column 4 lines 46-67, column 5 lines 1-2) referenced by $\Delta q$=INC step 405 the increment of counter q based upon receiving packets from the second node for the duration of $\tau$ which is the round trip delay time, and using said sent counter to determine if a failure has occurred in said communications link between said first node and said second node (FIG. 3) referenced by the use q for determination of change over to take a transmission link out of service step 311.

Claim 10, Schmidt teaches a method for detecting the status of a communications link between a first node and a second node (FIG. 1, Abstract lines 1-3) referenced by node 1 ERM 111 and node 2 ERM 101 used for determining when a transmission link should be taken out of service, the method comprising establishing an RTT value for use in said first node using said second node (FIG. 1, column 2 lines 20-27) referenced by ERM 112 using $\tau$ which is the round trip delay on the transmission link between nodes 1 and 2, establishing an RTT value for use in said second node using said first node (FIG. 1, column 2 lines 20-27) referenced by ERM 101 using $\tau$ which is the round trip delay on the transmission link between nodes 1 and 2, setting a first sent counter in said first node to 0 (FIG. 1, Abstract lines 10-11, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent and the setting of this counter to 0, and starting an RTT-based time interval in said first node when a packet is received from said second node (FIG. 2, column 4 lines 46-54) referenced by the counter 201 which is restarted using a time interval based on $\tau$ the round trip delay, setting a second sent counter in said second node to 0 (FIG. 1, Abstract lines 10-11, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 101 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent and the setting of this counter to 0, and starting an RTT-based time interval in said second node when a packet is received from said first node (FIG. 2, column 4 lines 46-54) referenced by the counter 201 using a time interval based on $\tau$ the round trip delay in determining it's start

interval, incrementing said first sent counter when a packet is sent to said second node from said first node according to said RTT-based time interval (FIG. 3, FIG. 4, column 4 lines 46-67, column 5 lines 1-2) referenced by $\Delta q$=INC step 405 the increment of counter q based upon receiving packets from the second node for the duration of $\tau$ which is the round trip delay time, incrementing said second sent counter when a packet is sent to said first node from said second node according to said RTT-based time interval (FIG. 3, FIG. 4, column 4 lines 46-67, column 5 lines 1-2) referenced by $\Delta q$=INC step 405 the increment of counter q based upon receiving packets from the first node for the duration of $\tau$ which is the round trip delay time, and using either said first sent counter or said second sent counter to determine if a failure has occurred in said communications link between said first node and said second node (FIG. 1, Abstract line 1-19, FIG. 3) referenced by the ERM 111 and ERM 101 of nodes 1 and 2 respectively each monitoring for errors with ability to initiate a changeover to take a transmission link out of service as shown in step 313.

Claim 18, Schmidt teaches a communications link failure detection system between a first node and a second node (FIG. 1, Abstract lines 1-3) referenced by node 1 ERM 111 and node 2 ERM 101 used for determining when a transmission link should be taken out of service, comprising a communications system operably disposed within said first node (FIG. 1) referenced by node 1 transmitter 107 and receiver 112, wherein said communications system in said first node further comprises an RTT determiner component operably disposed therein (column 2 lines 20-27) referenced by the use of $\tau$

the round trip delay which implicitly requires a method of $\tau$ determination, and where said RTT determiner is in operable communication with said second node and configured to establish an RTT value usable in said first node using said second node (column 2 lines 20-27) referenced by the use of $\tau$ the round trip delay which is determined by the time of packet travel from the first node to the second node and back to the first node, wherein said communications system in said first node further comprises a sent counter operably disposes therein (FIG. 1, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent, and where said sent counter is further configured to be set to a value corresponding to an RTT time interval and a previous sent counter value when a packet is received from said second node (FIG. 3, FIG. 4, column 4 lines 62-67, column 5 lines 1-13) referenced by the use of q based on the $\tau$ value with the adjustment $\Delta q$ made to the prior value of q, and wherein said communications system in said first node further comprises a threshold value operably disposed therein (column 2 lines 32-34) referenced by the threshold T, and where said threshold value is further configured to be compared to said sent counter (FIG. 3) referenced by step 311 comparing q to T, enabling said communications system to make a communication slink status determination thereby (FIG. 3) referenced by step 313 to initiate a changeover if the threshold value is exceeded.

Claim 20, Schmidt teaches where said sent counter is set to 0 at the start of a communications session (Abstract lines 10-11) referenced by the initialization of the counter to 0.

Claim 21, Schmidt teaches where said threshold value is a constant (FIG. 5) referenced by the threshold value 503 represented by a constant line value.

Claim 24, Schmidt teaches a program storage device readable by a machine (FIG. 7) referenced by Program Memory 720, tangibly embodying a program of instructions executable by a machine (column 7 lines 22-40) referenced by the microprocessor 705 communicating with a program memory 720 for performing processes, for detecting the status of a communications link between a first node and a second node (FIG. 1, Abstract lines 1-3) referenced by node 1 ERM 111 and node 2 ERM 101 used for determining when a transmission link should be taken out of service, the method comprising establishing an RTT value for use in said first node using said second node (FIG. 1, column 2 lines 20-27) referenced by ERM 112 using $\tau$ which is the round trip delay on the transmission link between nodes 1 and 2, setting a sent counter in said first node to a base value (FIG. 1, Abstract lines 10-11, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent and the setting of this counter to a base value of 0, and starting an RTT-based time interval in said first node when a packet is received from said second node

(FIG. 2, column 4 lines 46-54) referenced by the counter 201 which is restarted using a time interval based on $\tau$ the round trip delay, incrementing said sent counter when a packet is sent to said second node from said first node according to said RTT-based time interval (FIG. 3, FIG. 4, column 4 lines 46-67, column 5 lines 1-2) referenced by $\Delta q$=INC step 405 the increment of counter q based upon receiving packets from the second node for the duration of $\tau$ which is the round trip delay time, and using said sent counter to determine if a failure has occurred in said communications link between said first node and said second node (FIG. 1, Abstract line 1-19, FIG. 3) referenced by the ERM 111 and ERM 101 of nodes 1 and 2 respectively each monitoring for errors with ability to initiate a changeover to take a transmission link out of service as shown in step 313.

Claim 26, Schmidt teaches a system for detecting the status of a communications link between a first node and a second node (FIG. 1, Abstract lines 1-3) referenced by node 1 ERM 111 and node 2 ERM 101 used for determining when a transmission link should be taken out of service, comprising means for establishing an RTT value for use in said first node using said second node (column 2 lines 20-27) referenced by $\tau$ which is the round trip delay on the transmission link between nodes 1 and 2, means for setting a sent counter in said first node to a base value (FIG. 1, Abstract lines 10-11, column 2 lines 20-31 lines 40-46) referenced by the Error Rate Monitor 111 inclusive of a counter q of transmission messages based on round trip delay which is indicative of the correct reception of messages sent and the setting of this counter to a base value of 0, and

starting an RTT-based time interval in said first node when a packet is received from said second node (FIG. 2, column 4 lines 46-54) referenced by the counter 201 using a time interval based on $\tau$ the round trip delay, means for incrementing said sent counter when a packet is sent to said second node from said first node according to said RTT-based time interval (FIG. 3, FIG. 4, column 4 lines 46-67, column 5 lines 1-2) referenced by $\Delta q$=INC step 405 the increment of counter q based upon receiving packets from the second node for the duration of $\tau$ which is the round trip delay time, and means using said sent counter to determine if a failure has occurred in said communications link between said first node and said second node (FIG. 3) referenced by the use q for determination of change over to take a transmission link out of service step 311.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 11, 19, 25, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt as applied to claims 1, 2, 3, 4, 8, 10, 18, 20, 21, 24, 26 above in view of Kant (Patent number 5563874).

Claims 9, 11, 19, 25, 27, Schmidt teaches an apparatus for transmission link error rate monitoring. Schmidt does not teach an SCTP/IP-compliant protocol.
Kant teaches an error monitoring algorithm for link signaling wherein the communications system link uses an SCTP/IP-compliant protocol (column 3 lines 3-14) referenced by Service Specific Connection Oriented Protocol which is analogous to a SCTP/IP compliant protocol.
It would have been obvious to us SSCOP protocol as suggested by Kant with the ERM apparatus of Schmidt for monitoring the error performance of an ATM signaling link to determine if the link should be removed from service.

***Allowable Subject Matter***

3. Claims 5, 6, 7, 22, 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-17 are allowed.

***Response to Arguments***

Applicant's argument over rejection of claims 1, 8, 10, 18, 24 and 26 has been fully considered but they are not persuasive. The examiner respectfully presents the counter argument.

Regarding the argument traversing the rejection of the claims pertaining to the limitation of a sent counter, the limitation of a sent counter is not defined beyond a count of information sent, not necessarily one to one, nor any particular type of information. Schmidt discloses a sent counter as a "q" value which forms such a count as an estimate of the number of messages stored in the transmit buffer in conjunction with the clock comparison counter 214 for comparison to the round trip time. "q" is a count of information transmission even though it is comprised of subcomponents including error detector and clock to delay comparison.

Regarding the argument traversing the rejection of the claims pertaining to the limitation of a threshold having an initial value, Schmidt discloses a threshold T 208 (FIG. 2) to which the counter "q" is compared against. The threshold must be set to an initial value for comparison without which the threshold would have no definition.

Regarding the argument traversing the use of an RTT-time interval for updating a sent counter, Schmidt discloses the use of $\tau$, the round trip delay (column 2 lines 20-28) which is used to compute "q" (FIG. 3) and as such updates a sent counter.

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L. Shew whose telephone number is 571-272-3137. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

js

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER